DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	BOWKER POND	Lake Area (ha):	17.76
Town:	FITZWILLIAM	Maximum depth (m):	2.7
County:	Cheshire	Mean depth (m):	0.8
River Basin:	Connecticut	Volume (m^3):	147000
Latitude:	42°48' N	Relative depth:	0.6
Longitude:	72°10' W	Shore configuration:	2.48
Elevation (ft):	1170	Areal water load (m/yr):	10.08
Shore length (m):	3700	Flushing rate (yr^{-1}):	12.20
Watershed area (ha):	338.2	P retention coeff.:	0.55
% watershed ponded:	0.0	Lake type:	natural w/dam

BIOLOGICAL:	23 February 1988	27 July 1987
DOM. PHYTOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	SYNURA 30%
#2		FILAMENTOUS GREEN SPP. 30%
#3		TABELLARIA 20%
PHYTOPLANKTON ABUNDANCE (cells/mL)		1940.0
CHLOROPHYLL-A (µg/L)		7.80
DOM. ZOOPLANKTON (% TOTAL) #1	SYNCHAETA 44%	KERATELLA 29%
#2	CILIATE SPP. 34%	POLYARTHRA 25%
#3		DAPHNIA 13%
ROTIFERS/LITER	47	332
MICROCRUSTACEA/LITER	19	153
ZOOPLANKTON ABUNDANCE (#/L)	100	485
VASCULAR PLANT ABUNDANCE		Abundant
SECCHI DISK TRANSPARENCY (m)		2.0
BOTTOM DISSOLVED OXYGEN (mg/L)	0.1	0.2
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		10
#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3): None

CHEMICAL:

Lake: BOWKER POND
Town: FITZWILLIAM

	23 February 1988		27 July 1987		
DEPTH (m)	2.0		1.0		2.0
pH (units)	5.2		4.8		4.3
A.N.C. (Alkalinity)	2.8		-0.3		-2.9
NITRATE NITROGEN	< 0.05		< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.50		0.56		0.58
TOTAL PHOSPHORUS	0.012		0.024		0.028
CONDUCTIVITY (μ mhos/cm)	99.3		80.1		98.3
APPARENT COLOR (cpu)	115		55		60
MAGNESIUM			0.54		
CALCIUM			2.1		
SODIUM			10.3		
POTASSIUM			0.40		
CHLORIDE	20		15		16
SULFATE	7		5		8
TN : TP	42		23		21
CALCITE SATURATION INDEX					

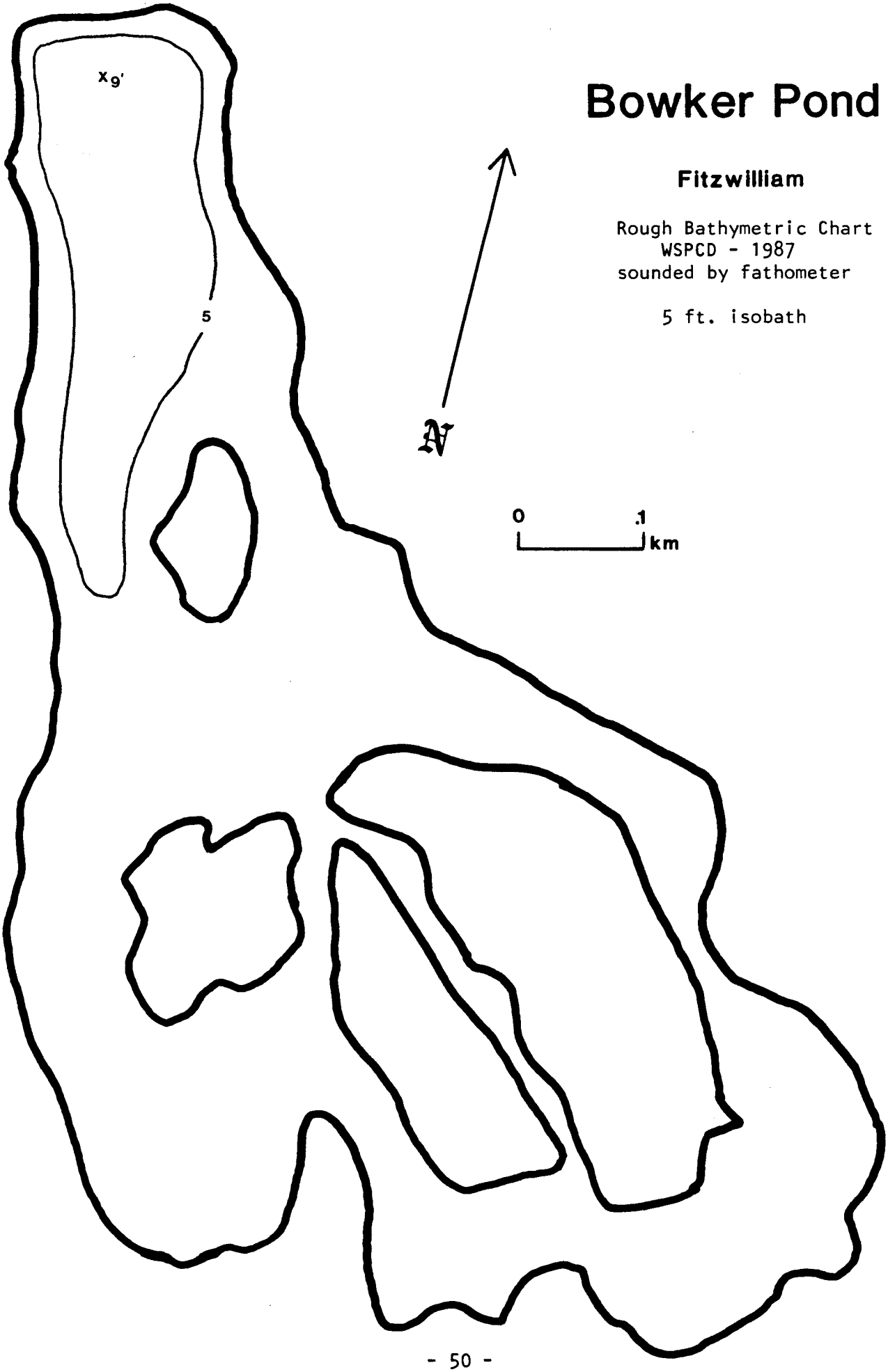
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1987

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
5	2	3	1	11	Eutro.

COMMENTS:

1. Sometimes called Bowkerville Pond.
2. The boat was launched at the Bowkerville Fire Department training center.
3. Water was a dark tea color.
4. No water was flowing out of the outlet spillway at the time of the summer sampling.
5. The visible bottom was a very organic peaty bottom.
6. The whole-water phytoplankton was 50% Cryptomonads and 35% greens. The dominant genus was Cryptomonas (50%).



Bowker Pond

Fitzwilliam

Rough Bathymetric Chart
WSPCD - 1987
sounded by fathometer

5 ft. isobath

FIELD DATA SHEET

LAKE: BOWKER POND
DATE: 07/27/87

TOWN: FITZWILLIAM
WEATHER: SUNNY, DRY, WINDY, CLOUDS...

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	25.1	6.0	71 %
	1.0	24.4	5.4	63 %
	1.5	23.8	2.8	32 %
	2.0	22.3	0.3	3 %
	2.5	19.9	0.2	2 %

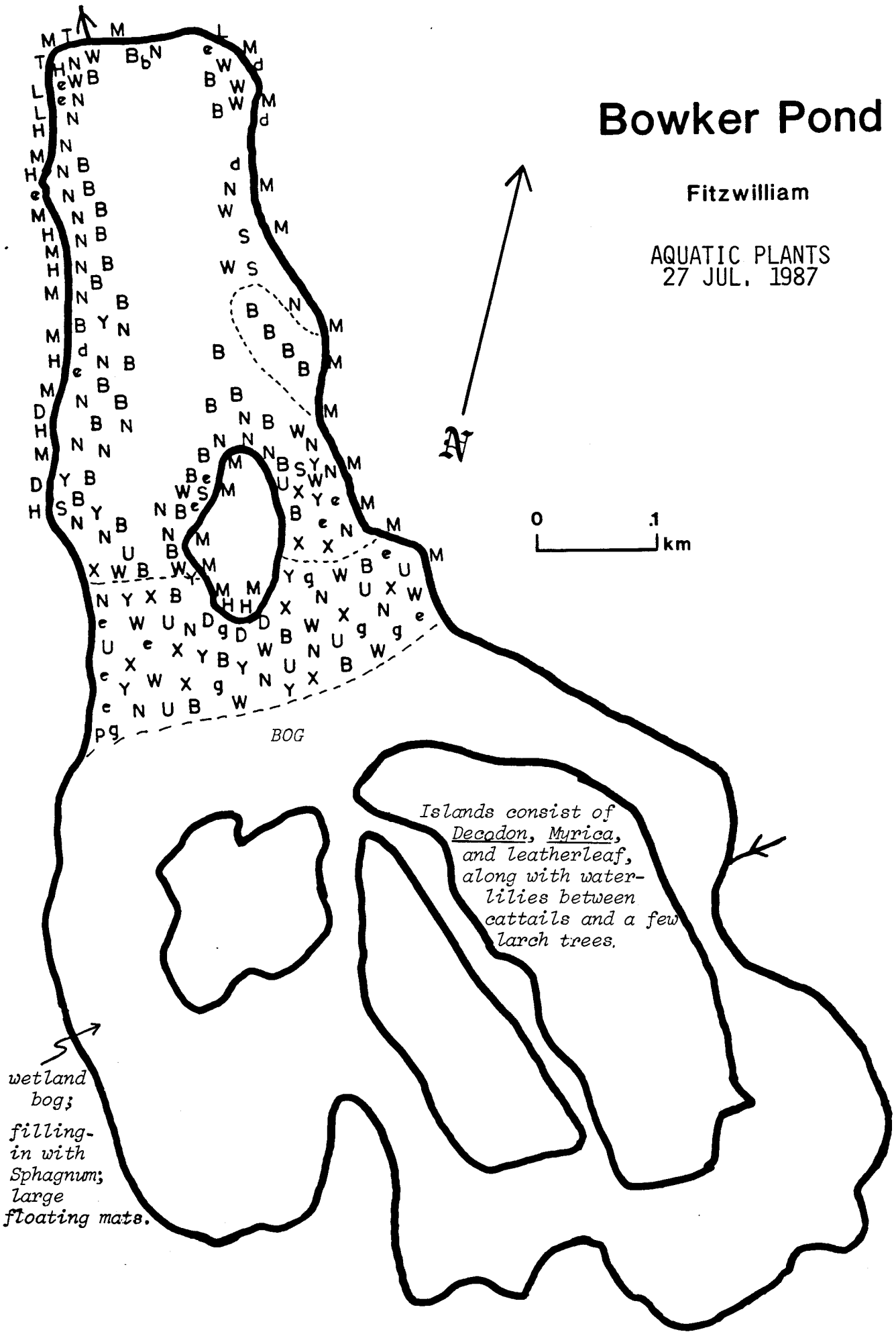
SECCHI DISK (m): 2.0

BOTTOM DEPTH (m): 2.6

TIME: 1230

COMMENTS:
A D.O. depletion occurred at the bottom despite the lack of a thermocline and hypolimnion.

*Dissolved oxygen values are in mg/L


Bowker Pond
Fitzwilliam
AQUATIC PLANTS
27 JUL. 1987
N
0
.1
km
BOG
Islands consist of Decodon, Myrica, and leatherleaf, along with water-lilies between cattails and a few larch trees.
wetland bog; filling-in with Sphagnum; large floating mats.

AQUATIC PLANT SURVEY

LAKE: BOWKER POND TOWN: FITZWILLIAM DATE: 07/27/87

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
b	Scirpus	Bulrush	Sparse
W	Potamogeton	Pondweed	Common
N	Nymphaea	White water lily	Abundant
T	Typha	Cattail	Sparse
e	Eleocharis	Spike rush	Scattered
d	Dulichium arundinaceum	Three-way sedge	Scattered
L	Lysimachia terrestris	Swampcandle	Sparse
H	Hypericum	St. John's-wort	Scattered
B	Brasenia schreberi	Water shield	Abundant
Y	Nuphar	Yellow water lily	Scattered
A	Sagittaria	Arrowhead	Sparse
M	Myrica gale	Sweet gale	Common
S	Sparganium	Bur reed	Sparse
U	Utricularia	Bladderwort	Common
X		Sterile thread-like leaf	Common
D	Decodon verticillatus	Swamp loosestrife	Scattered
g	Sphagnum	Peat moss	Common

OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. The only open water was north of the single island where plants were common to abundant. Plants were very abundant south of the island.
2. The 3 southern islands were not true islands but growths of swamp loosestrife, sweet gale, and leatherleaf interspersed with water lilies, cattails, and a few larches.
3. The area south of the single island is a bog, filling in with large floating mats of Sphagnum in between the peat/heath 'islands'.
4. All submerged objects were covered with filamentous algae.